

CANHAM et al
U.S.S.N. 10/516,340
March 10, 2008

REMARKS

Reconsideration of this application is requested. Claims 1-27 are in the case.

I. THE 35 U.S.C. §112, SECOND PARAGRAPH, REJECTION

Claim 28 stands rejected under 35 U.S.C. §112, second paragraph, as allegedly indefinite. In response, claim 28 has been cancelled without prejudice.

II. THE ANTICIPATION REJECTION

Claims 1-3, 12, 17, 18, 20-27 stand rejected under 35 U.S.C. §102(e) as allegedly anticipated by U.S. Published Application No. 2003/0175410 to Campbell et al. (Campbell). That rejection is respectfully traversed.

The process as claimed is for preparing an orthopedic scaffold. The process comprises forming shaped blocks of a bioactive material comprising silicon, treating one or more selected surfaces of the blocks such that they will adhere to a similarly treated surface of a similar block, self-assembly of a scaffold comprising two or more of the blocks under conditions in which the treated surfaces will bind together, and thereafter recovering the assembled structure.

Campbell relates to the preparation of a block "which may be cut or moulded into the desired shape" (paragraph [0055], also cited in the Action). However, Campbell contains no disclosure of a scaffold comprising "two or more" of such blocks as recited in claim 1. Campbell also mentions orthopedic scaffolds (Paragraph [0177]), but this is in the context of a coating which may be "pre-fabricated in sheets, films, blocks, plugs or

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other structures and applied/adhered to the device". Campbell contains no disclosure of "two or more" blocks treated such that they will adhere together and self-assemble to form a scaffold.

The Action asserts that Campbell (paragraph [0166]) discloses self assembly of a scaffold comprising two or more blocks under conditions in which the treated surfaces will bind together and recovery of the assembled structure. Applicants disagree. Paragraph [0166] refers to biomimetic scaffolds containing a 3-D pattern of adhesion molecules specific for one or more cell types so as to attract and adhere *particular cell types to the scaffold in a desired 3-D architecture*. The "adhesion" referred to in paragraph [0166] is adhesion of tissue to the scaffold structure when implanted in the body, not adhesion of the individual component blocks in a self-assembly process to form the scaffold initially.

The Action asserts that Campbell (paragraph [0124]) discloses the formation of shaped blocks of a bioactive material comprising silicon. However, paragraph [0124] does not mention silicon but instead refers to a "bioactive glass comprising metal oxides such as calcium oxide, *silicon dioxide*, sodium oxide, phosphorus pentoxide and mixtures thereof" (emphasis added). As is clear from the discussion at page 7, line 18 of the present application, the "silicon" of the present invention refers to material comprising elemental silicon. Campbell contains not disclosure of such material.

As Campbell contains no disclosure of the methodology as claimed, it is clear that Campbell does not anticipate the invention as claimed. Withdrawal of the anticipation rejection is accordingly respectfully requested.

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III. THE OBVIOUSNESS REJECTIONS

Claims 4-11 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Campbell in view of U.S. Published Patent Application No. 2003/0232198 to Lamberti et al. Claim 13 stands rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Campbell in view of U.S. Published Patent Application 2005/0226904 to Choi et al. Claims 14-16 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Campbell in view of Choi et al and further in view of U.S. Patent 6,033,582 to Lee et al. Claim 19 stands rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Campbell in view of U.S. Patent 5,073,373 to O'Leary et al. Those rejections are respectfully traversed.

Referring to the rejection of claims 4-11, it is noted at the outset that claims 4-11 are dependent, either directly or indirectly, on claim 1 and accordingly incorporate the features of claim 1 which are novel over and not suggested by Campbell for the reasons discussed above. In particular, Campbell does not disclose or suggest the self assembly of a scaffold comprising "two or more" blocks treated so as to adhere to each other, and this deficiency is not cured by Lamberti. There would have been no recognition based on Campbell and Lamberti that the ability of bioactive silicon to attach to living tissue might render it useful in orthopedic scaffolds. There would therefore have been no motivation for one of ordinary skill to combine Campbell and Lamberti, and even if such a combination had been attempted (it is believed this would not have been contemplated by one of ordinary skill), the present invention would not have resulted or have been rendered obvious thereby.

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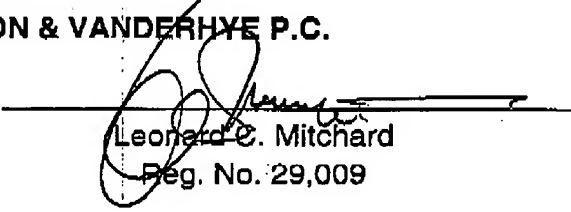
Referring to the remaining obviousness rejections over Campbell in view of secondary art (Choi, Lee, O'Leary), none of this secondary art cures the underlying deficiencies Campbell as discussed above. In view of this, it is believed clear that the invention as claimed in this application would not have been rendered obvious to one of ordinary skill in the art based on the combined disclosures of Campbell in view of Lamberti, Choi, Lee and/or O'Leary. One of ordinary skill would not have been motivated to arrive at the presently claimed invention based on those disclosures. Absent any such motivation, a *prima facie* case of obviousness has not been generated in this case. Reconsideration and withdrawal of the outstanding obviousness rejections are accordingly respectfully requested.

Favorable action is awaited.

Respectfully submitted,

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